IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Kazumasa Inoue, et al.
Serial No.:	10/786,622
Filed:	February 24, 2004
For:	MULTI-FUNCTIONAL ADMIXTURES FOR CONCRETE
Group Art Unit:	1713
Examiner:	W. K. Cheung
Attorney Docket:	TKMT P127

SECOND DECLARATION UNDER 37 CFR § 1.132

Commissioner for Patents
Alexandria, Virginia 22313

Sir:

I, Mitsuo Kinoshita, declare as follows:

1. I am one of the joint inventors of the above captioned patent application.

2. I am familiar with the prosecution history of the above captioned patent application, inclusive of the Final Office Action mailed April 16, 2008 from the United States Patent and Trademark Office, as well as the document entitled Amendment "J" mailed January 29, 2008 to the United States Patent and Trademark Office, in the above captioned patent application.

3. Since the application was rejected in view of four cited references, Kerkar, Ohta, Fischer and Kloetzer in said Office Action mailed April 16, 2008, I have carried out the following experiments in order to examine the effects of replacing one or more of Components A, B and C of the present invention by what is disclosed in these cited references. Results of these experiments are presented hereinbelow. For the sake of convenience of the explanation, results of similar experiments carried out and reported in the document entitled DECLARATION UNDER 37 CFR § 1.132 and mailed earlier on January 29, 2008 together with AMENDMENT "J" are also included.

Firstly, I synthesized the following comparison samples:

AR-1 which is the copolymer M-1511 of Example II described by Kerkar in column 6 at lines 17-35 instead of Component A of the present invention;

AR-2 which is Sample S02 of Preparation 4 described by Ohta in column 3 at lines 50-67 instead of Component A of the present invention;

AR-3 which is Sample A(C) of Preparation 3 described by Ohta in column 3 at lines 32-49 instead of Component A of the present invention;

AR-4 which was prepared similarly to Sample S02 of Preparation 4 described by Ohta in column 3 at lines 50-67 and is described as Sample B02 in Table 1 of Ohta instead of Component A of the present invention;

BR-1 which is polypropyleneglycol (MW=425) described by Berke in column 6 at lines 60-61 instead of Component B of the present invention;

BR-2 which is nonylphenolpolyethylene glycol ether (9.5 polyethylene units) of Example I described by Fischer in column 5 at lines 16-26 instead of Component B of the present invention;

BR-3 which is octylphenol polyethylene glycol ether (11 moles ethylene oxide) of Example VII described by Fischer from column 8, line 73 to column 9, line 3 instead of Component B of the present invention;

BR-4 which is dodecylphenol polyethylene glycol ether (22 moles ethylene oxide) of Example VIII described by Fischer in column 9 at lines 4-9 instead of Component B of the present invention;

CR-1 which is lauryl=polyoxyethylene (5 mol)=sodium salt of phosphoric acid ester, corresponding to monoester of phosphoric acid described by Kloetzer in column 7 at lines 15-25 instead of Component C of the present invention;

CR-2 which is octylphenyl oxyoctyl=sodium salt of phosphoric acid ester, corresponding to monoester of phosphoric acid described by Kloetzer in column 7 at lines 15-25 instead of Component C of the present invention;

CR-3 which is octylphenyl=polyoxyethylene (5 mol)=sodium salt of phosphoric acid ester, corresponding to monoester of phosphoric acid described by Kloetzer in column 7 at lines 15-25 instead of Component C of the present invention;

CR-4 which is similar to Lutensit A-EP described by Kloetzer in column 6 at lines 15-18; and

CR-5 which is a mixture of mono- and diphosphoric acid esters of lauryl alcohol with 4 ethylene oxide groups in column 6 at lines 25-26.

Secondly, Reference Examples 1-15 (T1-T-15) of mixture were prepared by using the samples AR-1 through CR-5 described above and as explained in Part 2 of the specification of the present application. Details of these Comparison Examples 1-15 are summarized below in Table 2b. Table 2b herein corresponds to Table 2 in the specification of this

application and the same symbols that were used in Table 2 in the specification of the present application are used therein.

Table 2b

	Kind	Component A (kind/ratio(part))	Component B (kind/ratio(part))	Component C (kind/ratio(part))
Reference Example:				
1	T-1	AR-1/50	b-1/49	c-1/1
2	T-2	AR-2/50	b-1/49	c-1/1
3	T-3	AR-3/50	b-1/49	c-2/1
4	T-4	AR-4/50	b-1/49	c-2/1
5	T-5	a-1/50	BR-1/49	c-1/1
6	T-6	a-1/50	b-1/49	CR-1/1
7	T-7	a-1/50	b-1/49	CR-2/1
8	T-8	a-1/50	b-1/49	CR-3/1
9	T-9	AR-1/50	BR-1/49	CR-1/1
10	T-10	AR-2/50	BR-1/49	CR-1/1
11	T-11	a-1/50	BR-2/49	c-1/1
12	T-12	a-1/50	BR-3/49	c-1/1
13	T-13	a-1/50	BR-4/49	c-1/1
14	T-14	a-1/50	b-1/49	CR-4/1
15	T-15	a-1/50	b-1/49	CR-5/1

Next, the mixtures T-1 through T-15 were used to prepare concrete samples of Reference Examples 16-30 as explained in Part 3 of the specification of the present application. Details of these samples and the results of their evaluation are shown below in Tables 4b and 5b, including Reference Examples 16-25 which were presented earlier in the document entitled DECLARATION UNDER 37 CFR § 1.132 filed together with Amendment "J". Tables 4b and 5b correspond respectively to Tables 4 and 5. Symbols used in Tables 4b and 5b are the same as those used in Tables 4 and 5 of the specification of the present application except aforementioned T-1 - T-15.

Table 4b

	Admixture		Property of concrete				
	Kind	Added amount *6	Immediately after kneading		90 minutes later		Slump loss (%)
			Slump (cm)	Air quantity (%)	Slump (cm)	Air quantity (%)	
Reference Example:							
16	T-1	0.38	18.2	4.5	13.4	4.2	73.6
17	T-2	0.43	18.5	4.8	13.5	4.0	73.0
18	T-3	0.36	18.7	4.7	13.1	4.2	70.0
19	T-4	0.40	18.3	4.6	13.4	4.1	73.2
20	T-5	0.32	18.4	4.8	13.2	4.4	71.7
21	T-6	0.33	18.6	4.9	13.4	4.3	72.0
22	T-7	0.35	18.0	4.6	13.0	4.0	72.2
23	T-8	0.33	18.3	4.8	13.2	4.1	72.1
24	T-9	0.41	18.5	4.6	13.3	4.3	71.9
25	T-10	0.43	18.5	4.8	13.4	4.4	72.4
26	T-11	0.34	18.5	4.6	12.5	3.9	67.5
27	T-12	0.35	18.7	4.8	11.6	3.7	62.0
28	T-13	0.34	18.6	4.5	12.0	4.0	64.5
29	T-14	0.33	18.2	4.7	12.4	3.6	68.1
30	T-15	0.33	18.4	4.5	11.2	3.3	60.8

Table 5b

	Properties of admixture				
	Shrinkage ($x10^{-4}$) at 26 weeks	Durability against freezing and thawing action (300 cycles)	Accelerated carbonation depth (mm)	Compressive strength	
				Age = 7 days	Age = 28 days
Reference Example:					
16	5.4	73	10.8	36.0	49.1
17	5.4	70	10.7	36.4	49.5
18	5.3	72	10.9	36.2	49.2
19	5.5	68	10.8	36.2	49.3
20	5.4	62	11.0	36.0	49.0
21	5.2	55	11.0	36.3	49.2
22	5.2	41	11.0	36.4	49.5
23	5.2	43	11.0	36.2	49.0
24	5.3	61	11.0	36.0	49.0
25	5.2	52	11.0	36.1	49.0
26	7.0	46	11.0	35.7	48.6
27	7.1	49	10.9	35.5	48.4
28	7.4	53	10.8	36.0	49.1
29	5.6	<30	11.0	35.9	48.8
30	5.7	<30	11.0	36.0	49.0

I conclude from the results shown in Tables 4b and 5b as compared with those in Table 4 and 5 that the samples which use components other than the components according to the present invention do not have the favorable characteristics, especially regarding slumps and durability against freezing and thawing action.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. I further declare that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both (under Section 1001 of Title 18 of the United States Code), and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Mitsuo Kinoshita

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5 June 2008

Date